



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,537	12/05/2003	Dina Katsir	ACKT 336/8.3	3020

27774 7590 07/13/2007  
MAYER & WILLIAMS PC  
251 NORTH AVENUE WEST  
2ND FLOOR  
WESTFIELD, NJ 07090

EXAMINER
----------

ROE, JESSEE RANDALL

ART UNIT	PAPER NUMBER
----------	--------------

1742

MAIL DATE	DELIVERY MODE
-----------	---------------

07/13/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/730,537

Applicant(s)

KATSIR ET AL.

Examiner

Jessee Roe

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 18-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Status***

Claims 1-24 are pending wherein claims 18-24 are withdrawn from consideration.

### ***Status of Previous Rejections***

The previous rejection of claims 1-4 under 35 U.S.C. 103(a) as being unpatentable over Naitoh et al. (US 4,888,666) with evidence from Crawford et al. (US 4,364,995) is withdrawn in view of the Applicant's arguments. The previous rejection of claim 5 under 35 U.S.C. 103(a) as being unpatentable over Naitoh et al. (US 4,888,666) with evidence from Crawford et al. (US 4,364,995) in view of MacFarlane et al. (US 4,942,501) is withdrawn in view of the Applicant's arguments. The previous rejection of claims 6-14 under 35 U.S.C. 103(a) as being unpatentable over Naitoh et al. (US 4,888,666) with evidence from Crawford et al. (US 4,364,995) in view of MacFarlane et al. (US 4,942,501), and further in view of Harrington et al. (US 6,475,368) is withdrawn in view of the Applicant's arguments. The previous rejection of claims 15-17 under 35 U.S.C. 103(a) as being unpatentable over Naitoh et al. (US 4,888,666) with evidence from Crawford et al. (US 4,364,995) in view of Harrington et al. (US 6,475,368) is withdrawn in view of the Applicant's arguments.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 recites the limitations "the product" and "the last" in claim 5. There is insufficient antecedent basis for these limitations in the claims.

Claim 6 recites the limitation "the product" in claim 6. There is insufficient antecedent basis for this limitation in the claims.

Claim 7 recites the limitation "the initial layer" and in claim 7. There is insufficient antecedent basis for this limitation in the claims.

Claim 8 recites the limitation "the product" in claim 8. There is insufficient antecedent basis for this limitation in the claims.

Claim 11 recites the limitations "the vapor deposition", "the porous layer", "the initial layer", and "the ammonium" in claim 11. There is insufficient antecedent basis for these limitations in the claims.

Claim 12 recites the limitation "the product" in claim 12. There is insufficient antecedent basis for this limitation in the claims.

Claim 13 recites the limitation "the porous layer" and in claim 13. There is insufficient antecedent basis for this limitation in the claims.

Claim 14 recites the limitation "the porous layer" in claim 14. There is insufficient antecedent basis for this limitation in the claims.

Claim 15 recites the limitation "the porous coating" and in claim 15. There is insufficient antecedent basis for this limitation in the claims.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-4, 7, 9, 11 and 13-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ue et al. (US 5,733,661).

In regards to claims 1, 3-4, 7, 9, 11 and 13-16, Ue et al. ('661) disclose a method for preparing an anodized electrode comprising the steps of providing an electrically conductive substrate such as Al, Ti, Zr, Hf, Nb, and Ta or an alloy thereof in the shape of a wire, rod, foil or plate; coating by vacuum deposition an oxide film, which would inherently have a minor amount of oxygen present; increasing the surface area by etching; and producing electrolytically a valve oxide layer overlaying the surface of the porous coating (col. 3, line 57 – col. 6, line 29). Ue et al. ('661) further disclose the use of carboxylic acids such as oxalic acid in the presence of ammonium ions with acids such as chromic acid, oxalic acid, and phosphoric acid (col. 3, line 57 – col. 6, line 29). Although Ue et al. ('661) do not distinctly specify the order for the steps for preparing the anodized electrode, the implied order would be commensurate with that of the instant invention. Alternatively, it would have been obvious to one of ordinary skill in the art to select a Al, Ti, Zr, Hf, Nb, and Ta substrate having a thin film Al, Ti, Zr, Hf, Nb, and

Art Unit: 1742

Ta oxide layer and etching because etching would result in a product with an increased surface area. Therefore, a 102/103 rejection is proper.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hand (US 3,203,793).

In regards to claims 1-2, Hand ('793) discloses a method for preparing an anodized electrode comprising the steps of providing an alloy made of columbium and/or tantalum with titanium and/or vanadium (col. 1, lines 10-16); carrying out heating under reduced pressure to move the columbium and/or tantalum component of the alloy to the surface to form a porous surface (col. 1, lines 17-39); and electrolyzing to form a surface layer of oxides (on the porous surface) (col. 1, lines 60-64). Hand ('793) further discloses that when the metal body becomes porous develops an increased surface area (col. 1, lines 31-39) and that increasing the temperature of the heating while under reduced pressure results in an increased surface area and porosity which in turn increases the capacitance (Examples 14-15 and Table II). Although Hand ('793) does not specify the step of increasing the surface area of the porous coating, it would have been obvious to one of ordinary skill in the art at the time the invention was made to

adjust the temperature while heating, thereby altering the surface area and porosity, in order to achieve a desired capacitance because porosity and surface area would be result-effective variables as disclosed by Hand ('793). See MPEP 2144.05 II.

In regards to claim 3, Hand ('793) discloses wherein the alloy would be made of columbium and/or tantalum with titanium and/or vanadium, which would inherently be electrically conductive because they are metals.

In regards to claim 4, Hand ('793) discloses wherein the shapes of the capacitor materials would include a foil (col. 3, lines 1-15).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hand (US 3,203,793) in view of Brown et al. (US 3,331,993).

In regards to claim 5, Hand ('793) discloses a method for preparing an anodized electrode using a voltage up to 200 volts wherein the metal bodies would have more than one film (layer) (col. 1, line 60 – col. 2, line 14). However, Hand ('793) does not specify wherein annealing would take place before the anodization steps.

Brown et al. ('993) disclose preparing an anodized electrode (same field of endeavor) wherein the capacitor would undergo annealing before anodizing when anodizing at higher voltages. Annealing before anodizing results in a higher relative capacitance (col. 4, line 18 – col. 5, line 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method for preparing an anodized electrode using voltages up to 200 volts, as disclosed by Hand ('793), by annealing before anodizing, as disclosed by Brown et al. ('993), in order to achieve a higher relative

capacitance, as disclosed by Brown et al. ('993) (col. 4, line 18 – col. 5, line 5).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hand (US 3,203,793) in view of Brown et al. (US 3,331,993) and further in view of Power (US 2,989,447).

In regards to claim 6, Hand ('793) in view of Brown et al. ('993) disclose a method for preparing an anodized electrode as shown above, but Hand ('793) in view of Brown et al. ('993) do not specify wherein the product would be rinsed with a liquid selected from distilled and de-ionized water.

Power ('447) discloses wherein rinsing an anodized body with a distilled water prior to heating results in more uniform heating and produces a capacitor with a greater lifetime (col. 4, lines 1-11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of preparing an anodized electrode, as disclosed by Hand ('793) in view of Brown et al. ('993), by rinsing the anodized electrode with distilled water, as disclosed by Power ('447), in order to produce a capacitor that would have more uniform heating and a greater lifetime, as disclosed by Power ('447).

Claims 5, 8, 10, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ue et al. (US 5,733,661) in view of Yaholom (US 5,382,347).

In regards to claims 5, 8 and 12, Ue et al. ('661) disclose a method of preparing an anodized electrode as shown above, but Ue et al. ('661) do not specify wherein two



anodized layers would be formed and an annealing step would take place prior to the last of the anodization steps.

Yaholom ('347) discloses wherein a thermal treatment at a temperature of above 250°C (annealing) would be conducted between two anodizing steps. This treatment would prevent corrosion during thermal cycling and highly uniform and protective oxide coatings (col. 4, line 20-col. 5, line 25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of preparing an anodized electrode, as disclosed by Ue et al. ('661) by incorporating a thermal treatment at a temperature of above 250°C (annealing) between two anodizing steps, as disclosed by Yaholom ('347), in order to prevent corrosion during thermal cycling and highly uniform protective, oxide coatings, as disclosed by Yaholom ('347). (col. 4, line 20-col. 5, line 25).

In regards to claims 10 and 17, Ue et al. ('661) the use of carboxylic acids such as oxalic acid in the presence of ammonium ions with acids such as chromic acid, oxalic acid, and phosphoric acid (col. 3, line 57 – col. 6, line 29).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ue et al. (US 5,733,661) in view of Yaholom (US 5,382,347), and further in view of Power (US 2,989,447).

Ue et al. ('661) in view of Yaholom ('347) disclose a method of preparing an anodized electrode as shown above, but Ue et al. ('661) in view of Yaholom ('347) do not specify wherein the product would be rinsed with a liquid selected from distilled and de-ionized water.

Art Unit: 1742

Power ('447) discloses wherein rinsing an anodized body with a distilled water prior to heating results in more uniform heating and produces a capacitor with a greater lifetime (col. 4, lines 1-11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of preparing an anodized electrode, as disclosed by Ue et al. ('661) in view of Yaholom ('347), by rinsing the anodized electrode with distilled water, as disclosed by Power ('447), in order to produce a capacitor that would have more uniform heating and a greater lifetime, as disclosed by Power ('447).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JR

  
**ROY KING**  
**SENIOR PATENT EXAMINER**  
**TECHNOLOGY CENTER 1700**